

The Neuroscience of Meditation: Perspectives, Conversations, and Controversy

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The Dalai Lama arrived in Washington D.C. in the fall of 2005 – a sole saffron robe amongst business suits and white lab coats – amidst controversy. As the spiritual leader of the Tibetan people, His Holiness traveled from his residence in Dharmasala, India, to D.C. to give a lecture on the “Neuroscience of Meditation” at the Society for Neuroscience’s annual meeting. However, even before stepping foot in the U.S. capital, a flurry of protest centered on a religious leader’s symbolic role in speaking at a scientific conference.

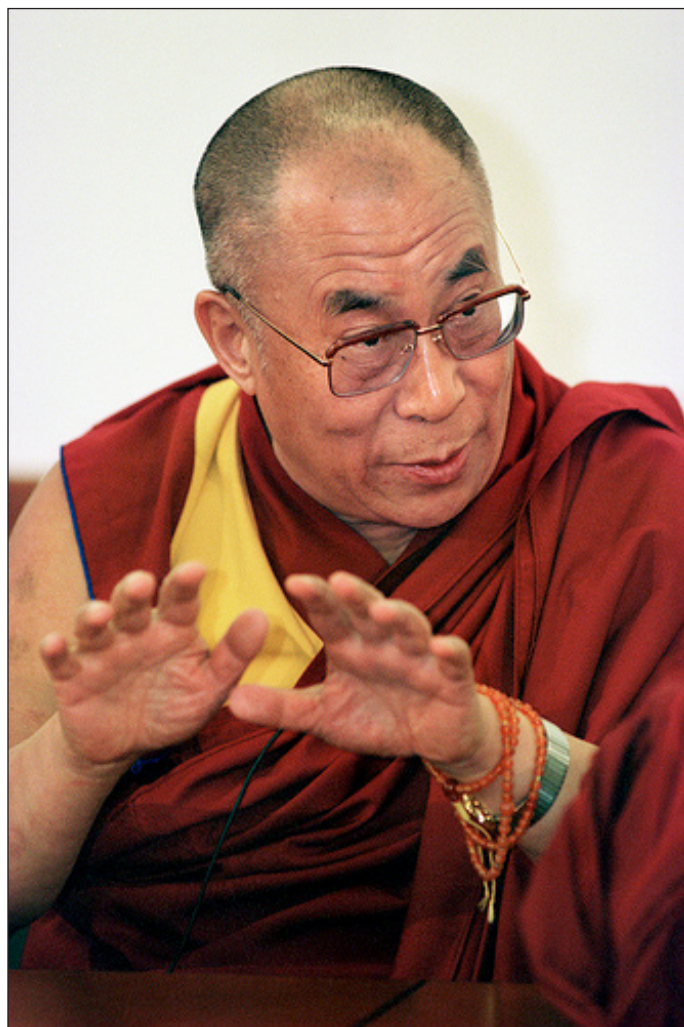
“Beliefs do not necessarily conflict with empirically based science”

Hundreds of signatures had already been collected in an online petition entitled “Against the Dalai Lama’s Lecture at Society for Neuroscience (SfN) 2005.” Sentiments ranged from concerns that the talk was going to be a philosophical lecture and not a scientific one, to vehement disagreements that “there is no logical reasoning that justifies including a religious talk at SfN” [1]. At the same time, proponents of the lecture drafted a counter-petition on the basis of building a public understanding of neuroscience and the fact that “such philosophical beliefs do not necessarily conflict with the empirically based constructions of science.” [2]

His Holiness’ controversial lecture was only a hint at the convergence between Eastern and Western thought, of using Western empirical methods to evaluate Eastern centuries-old traditions, of collaboration between scientific minds and contemplative experts. What was it about this topic that stirred the blood of some scientists but at the same time offered interest and insight for others? How did meditation become prominent in the scientific realm?

Meditation is a practice that embodies the psychological concept of the mind, whereby a person seeks to clear their mind into blankness and set themselves into a relaxed but attentive state. Meditation has been likened to the “pacification of turbulent waters” or a “glossy mirror of immense dimension.” [3] For some, meditation is a way of relaxation; for others, a method to practice absolute awareness; and for a select group, a way to access the inner self in order to achieve enlightenment.

Western scientists have taken up interest in this predominantly Eastern practice for a number of reasons, one of which is its implications for mental health. Neuroscientists have examined which areas of the brain are most affected by practicing meditation. A 2004 study found that there are overlapping activation regions for expert meditators with over 10,000 hours of practice and novice meditators in attention-related brain regions [4]. Despite these similarities, expert



The Dalai Lama. Reproduced from [9].

meditators showed greater activation than novice meditators in multiple attention-related and other frontoparietal regions. In contrast, novice meditators had greater activation in regions shown to negatively correlate with performance in a sustained attention task. Clearly, the practice of meditation affects the attention pathway and strength of activation. This study promoted the idea that one crucial aspect of mental well-being – attention – improves with concentration meditation.

Furthermore, another study with HIV-1 infected adults showed that mindfulness-based meditation has an effect on improved health [5]. Mindfulness meditation is based on the foundation of seeking to be mindful of one’s surroundings in a non-judgmental manner; of being aware of one’s senses and letting thoughts come and go without criticism. HIV patients who went through a multi-week mindfulness meditation training program showed decreased levels of CD⁴⁺ T lymphocytes as compared to controls. Since CD⁴⁺ T lymphocytes are biological markers of HIV progression, their reduction points to the promising role of meditation, or the

mindset elicited by meditation, for health implications.

Additionally, the Mind and Life Institute [6] was born out of a desire to incorporate Eastern traditions into Western science in a mutually beneficial manner. The institute, whose purpose is to “promote the creation of a contemplative, compassionate, and rigorous experimental and experiential science of the mind which could guide and inform medicine, neuroscience, psychology, education and human development,” was founded by R. Adam Engle, a North American businessman, and the late Dr. Francisco J. Varela in order to facilitate dialogue between Western scientists and the Dalai Lama. This dialogue includes promotion of the experimental science of contemplative practices, such as meditation, as well as public conferences and educational programs.

It is of the history of these collaborations that the Society for Neuroscience president at the time, Carol Barnes, justified the invitation, stating that the Dalai Lama’s long interest in science and ongoing dialogue with leading neuroscientists for more than fifteen years is the reason he was invited to speak at the meeting. Barnes added in an official statement, “It has been agreed that the talk will not be about religion or politics.” [7]

However, some have argued that it is the mere notion of inviting a religious speaker to speak that violates the integrity and mission of a scientific conference. “There will be a strong

“Meditation has an effect on improving health”

symbolic effect,” said Lu-Yang Wang, associate professor in the department of physiology at the University of Toronto. “His presence and talk at the SfN meeting per se suggest an endorsement by SfN of a prominent religious leader.” [7] While some dissidents have likened the inappropriateness of inviting the Dalai Lama to inviting the Pope, some were more concerned about the political motivations; Tibet is currently a territory of the People’s Republic of China, and there are vocal groups lobbying for its independence. Though the official stance of the United States is not in support of Tibetan independence, many worry that the Dalai Lama’s invitation from a prominent, well-known Western organization will provide an outlet to generate sympathy and support. “It will blur the distinctions between science, religion and politics, generate bad press, and cause divisions among SfN members,” Wang concluded [7].

Divisions indeed! Min Zhuo of the University of Toronto stated that The Dalai Lama “does not deserve to be invited” because “an honored guest needs to have a major contribution in [an] area we all believe in.” [8] However, subjectivity

stems from how “areas of interest” is to be interpreted. The talk, proponents claim, comes out of a growing interest in neuroplasticity, otherwise known as the ability of the adult brain to change and alter its state due to experience, which is arising to be a “central issue in neuroscience.” [8] The official press release promoted the talk to be the first in a series titled “Dialogues between Neuroscience and Society,” with speakers chosen by the SfN president after consultation with the SfN Council [7].

The major component of the criticisms came from the belief that the Dalai Lama had a hidden political agenda.

“Scientists should be open-minded and open to all inputs”

Some believed that choosing the exiled Tibetan leader would promote strong Buddhist religious overtones and reign in support for freedom for the autonomous region of Tibet, whose movements toward independence have been crushed by the Chinese government. The petition argued that giving legitimacy to the talk created a slippery slope of mixing science, politics, and religion. [8]

“Scientists should be open-minded and open to all inputs” countered Howard Fields of the University of California at San Francisco [7]. On the one hand, previous research on the impact of meditation on health should instigate further collaboration between scientists and contemplatives to work across cultural and political borders in order to improve health for society as a whole. On the other hand, the Society’s bylaws do state that “the purposes of the Society are scientific, educational, literary, charitable, and NO OTHER.” [1]

The future of contemplative-based neuroscience research will be interesting to watch develop as Eastern practices become more ingrained in Western society. While some applaud its cross-cultural multidisciplinary approach, others will continue to point out its empirical flaws and express healthy skepticism, which strikes a good balance in science. As for the passionate arguments on behalf of and against the talk, though, there was a neutral middle group of people who picked up tickets because they were “curious.” [7] Curiosity may have killed the cat, but it serves well in science to be open but skeptical, analytical but curious. ■

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